



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

MAY 17 2006

OFFICE OF  
AIR AND RADIATION

Mr. Kevin Brown  
Engine Control Systems  
165 Pony Drive  
Newmarket, Ontario  
L3Y 7V1  
CANADA

Dear Mr. Brown:

The U.S. Environmental Protection Agency (EPA) has reviewed your request for verification of the AZ Purifier / Purimuffler diesel oxidation catalyst (DOC) with the Engine Control System (ECS) Closed Crankcase Ventilation (CCV) System. Based on our evaluation of the verification application and test data, EPA hereby verifies that this technology reduces emissions of certain criteria pollutants by the percentages described in the table below when used with low sulfur diesel fuel (<30 ppm S) as compared to a baseline engine running on the same fuel.

This technology combination is approved for use on the following categories of engines and/or vehicles provided all of the required operating criteria are met as described below:

All 4-cycle highway, heavy-duty diesel engines including non-EGR, turbo-charged or naturally aspirated, mechanically or electronically injected, and originally manufactured from 1991 through 2004 model years which meet a 5 or 4 g/bhp-hr NO<sub>x</sub> standard that were not originally certified with a diesel oxidation catalysts and not built with a CCV system.

Technology	Fuel (sulfur content)	Particulate Matter (PM) %	Carbon Monoxide (CO) %	Hydrocarbons (HC) %	Oxide of Nitrogen (NO <sub>x</sub> ) %
AZ Purifier / Purimuffler DOC with the ECS CCV System	≤ 30 ppm	40	60	75	n/a

The following operating criteria must be met in order for appropriately retrofitted engines to achieve the aforementioned emissions reductions:

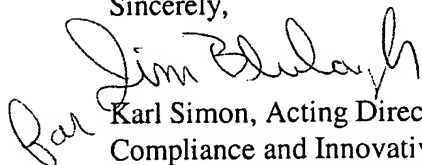
1. The engine should be well maintained and not consume lubricating oil at a rate greater than that specified by the engine manufacturer.
2. The engine must be operated with a fuel that contains a sulfur content of no more than 30 ppm.
3. The engine exhaust temperature must be at least 150 degrees C during the duty cycle.
4. The 4500 and 6000 model filter cartridges must be replaced every 750 engine hours or every other oil change or when indicated by red filter service indicator, whichever occurs first. The 3500 and 3550 model filter cartridges must be replaced every oil change or when indicated by the red service indicator, whichever occurs first.

Information on the AZ Purifier / Purimuffler DOC with the ECS CCV System, percent reductions, applicable engines, and in-use testing program will be posted on the EPA Voluntary Diesel Retrofit Program website ([www.epa.gov/otaq/retrofit](http://www.epa.gov/otaq/retrofit)). As you know, ECS will be responsible for completing the required in-use testing program and for submitting all in-use testing data to EPA.

This letter supersedes our earlier verification approval letter dated April 28, 2006.

Thank you for participating in EPA's Voluntary Diesel Retrofit Program. If you have any questions or comments, please contact Carl Wick, of my staff, at (202) 343-9331.

Sincerely,

  
Karl Simon, Acting Director  
Compliance and Innovative Strategies Division  
Office of Transportation and Air Quality